



THE NORTHWESTERN UNIVERSITY

Reviewing Stand

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Can We Stop Drunken Driving?

A radio discussion over WGN and the Mutual Broadcasting System

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THE REVIEWING STAND is a weekly radio forum presented by Northwestern University. The program was first broadcast by Station WGN, Chicago, October 14, 1934. It has been on the air continuously since that time, originating in the WGN studios, and, since 1935, carried by the stations of the Mutual Broadcasting System. THE REVIEWING STAND presents members of the Northwestern University faculty and distinguished guests from business, government, education, and the press in round table discussions of contemporary problems—the questions that are in the news. The program is under the direction of James H. McBurney, Dean of the School of Speech, Northwestern University and Miss Myrtle Stahl, Director of Educational Programs, WGN, Chicago.

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Can We Stop Drunken Driving?

MR. MCBURNEY: Can we stop drunken driving?

JUDGE PORTER: Drunken driving cannot be wholly stopped; it can be, however, materially reduced.

MR. DONIGAN: The answer is good, consistent enforcement using chemical tests.

DR. HARGER: And this should be coupled with ample education of the public on the damaging effect of even moderate amounts of alcohol on driving ability.

* * *

MR. MCBURNEY: Our speakers have been attending the 37th Annual National Safety Congress here in Chicago, under the auspices of the National Safety Council.

The Safety Council has long been concerned with the problem of traffic accidents; and by no means the least of the factors in this problem is the drunken or drinking driver. Just how serious is this problem, Judge Porter?

Sacrifice of Life

JUDGE PORTER: Last year, Dr. McBurney, on our streets and highways in America we killed an entire city by automobiles—a city about the size of Rome, New York; or Richmond, Indiana; Great Falls, Montana; Tyler, Texas; Greenbay, Wisconsin; Battle Creek, Michigan or any other of a number of fine American cities.

Last year on these streets and highways, we maimed and injured a city the size of Los Angeles by automobiles. During the 19 months of America's participation in World War I there were killed in action and died of wounds among the American forces on the battle fields of France some 50,510 Americans. During the 19-month period ending December 31, 1940—and I choose that period because it contains the last full prewar year when we were unaffected by gasoline

rationing, shortage of rubber tires or parts, etc.,—there were 56,900 people killed by automobile on our streets and highways.

During the 19 months of our participation in World War I there were wounded in action among the American forces in France some 234,300 Americans. During the 19-month period ending December 31, 1940 there were maimed and injured by automobile on our streets and highways in this nation 1,900,000 people—or almost eight times as many.

Now the cost in dollars and cents to the American public of these traffic accidents is \$2,650,000,000 annually or more than enough to defray the entire annual cost of the public school system of the nation.

MR. MCBURNEY: That certainly gives us the facts on automobile accidents, Porter. How do drinking drivers enter into this picture, Donigan?

MR. DONIGAN: Curbing the drinking driver is one of the most serious problems in reducing traffic accidents. National figures today show that one out of every five automobile drivers involved in fatal accidents is under the influence of intoxicating liquors.

DR. HARGER: And also figures from the National Safety Council and various cities show that one out of every four pedestrians killed in automobile accidents is very drunk.

MR. MCBURNEY: Do these published figures to which you gentlemen refer accurately indicate the full extent of the problem?

Reckless or Drunken Drivers?

JUDGE PORTER: No, they do not, Dr. McBurney, for several reasons. First, we find the police all over the nation booking drivers who ought properly be booked as drunken drivers as reckless drivers, for one main reason: the charge of reckless driving is far

easier to prove in our courts than drunken driving under the present methods used. Second, we find many of them—thousands of them—being booked as reckless drivers simply because they happen to be a friend of the police officer or a friend of someone else's friend.

MR. MCBURNEY: Who is this drinking driver? Are they adults, teenagers, men, women—what? Who is the drinking driver, Donigan?

MR. DONIGAN: They may be anybody. We don't find them among the younger drivers, that is, 15, 16, 17 years old; but we do find them when they are about 19, 20 and on up. And they may be men, women or young people—it doesn't make much difference.

JUDGE PORTER: I might say that we find just as many women drunken drivers in proportion to the number of women drivers on the streets as we find men.

DR. HARGER: However, you agree, don't you, Judge, that most of the driving is done by adult males?

JUDGE PORTER: Oh yes.

DR. HARGER: We are apt to get into trouble with our wives if we talk too much about the women drivers—although there are some of them.

JUDGE PORTER: I mean no reflection on the women of this nation, Doctor, I assure you.

MR. MCBURNEY: When and where does this drinking driver show up?

Danger Hours

MR. DONIGAN: He shows up usually between the hours of five and eight. That takes in those fellows that come home from work and stop too long in the taverns; or later on in the evening, around 11 p.m. until about 2 o'clock in the morning.

JUDGE PORTER: He also shows up to a very considerable extent on weekends and holidays, particularly the prominent holidays.

DR. HARGER: A few years ago there

was a study made in Evanston by the Northwestern Traffic Institute in which I participated as regards to methods. That study showed that from about midnight to 2 o'clock in the morning, although the traffic had dropped off, the fraction of total drivers who had been drinking a good deal was way up.

MR. MCBURNEY: Do I understand you to say that the drinking driver figures more prominently in serious accidents? Is that a fact, Harger?

DR. HARGER: Absolutely. This same study that I referred to, I think, is the most careful study of its kind and the most elaborate that has been done. They compared the frequency of accidents among drivers in general with drinking drivers and these studies showed that the drinking driver has many times his share of accidents. In fact, the driver who is in the "top zone" that we will probably talk about a little later, with the blood alcohol .15 per cent—the drivers in that group have increased their accident probability 55 times, that is 5500 per cent.

MR. MCBURNEY: We continue to use this term "drinking driver." How do you define a drinking driver, Donigan?

MR. DONIGAN: The drinking driver is the fellow who drinks intoxicating liquor.

MR. MCBURNEY: Is the amount of alcohol consumed the measure of drunkenness?

Effect on Brain

MR. DONIGAN: Oh no, no, no. It is what gets into the blood stream that affects the brain; that's what counts.

DR. HARGER: In other words, one isn't concerned here with *when* the drinking was done or even *how much* was consumed over a period. It is the amount of stored alcohol or accumulated alcohol. If everybody would drink only as fast as he could burn alcohol there wouldn't be any problem. It is the accumulated alcohol in the body, and particularly in the brain, that counts.

MR. MCBURNEY: How does the law get at this problem? What is the definition in the law of drunkenness or drinking driving, Porter?

JUDGE PORTER: I would be glad to give you that, but may I first ask Dr. Harger a question. Doctor, with reference to this proposition of the measure of drunkenness, it is a well-known fact, of course, that no two men react to whiskey the same way except by pure coincidence, isn't that correct?

DR. HARGER: Yes, there's a considerable variation.

JUDGE PORTER: And with the use of these chemical tests, whichever one of the many tests are used, you are testing for blood alcohol?

DR. HARGER: That's right.

JUDGE PORTER: Is that blood alcohol the most reliable index of intoxication?

DR. HARGER: Yes, I would say absolutely.

JUDGE PORTER: Or more properly, brain alcohol.

DR. HARGER: Because the correlation between brain alcohol and blood alcohol is very good!

'Under the Influence'

JUDGE PORTER: Now, answering your question, Dr. McBurney, about what the law means by "driving under the influence of intoxicating liquor," the National Safety Council on testing for intoxication back in 1937 made a thorough search of the courts of last resort and of intermediate resort throughout the nation. They collected an exhaustive list of definitions of this phrase, "under the influence of intoxicating liquor." Apparently the legislatures mean by it what the Arizona Supreme Court indicates in the case of *Steffani vs. State*, 42 Pac. (2nd) page 615. There the phrase is defined as follows: The phrase "under the influence of intoxicating liquors" covers not only all the well known and easily recognized conditions and degrees of intoxication but any abnormal mental or physical condition which is the re-

sult of indulging, in any degree, in intoxicating liquor and which tends to deprive the driver of that clearness of intellect and control over himself which he would otherwise possess. If the ability of a driver of an automobile has been lessened in the slightest degree by the use of intoxicating liquor, then that driver is deemed to be under the influence of intoxicating liquor. The mere fact that the driver has taken a drink does not place him under the ban of the statute unless such drink has some effect upon him, lessening in some degree his ability to handle said automobile.

DR. HARGER: Judge, as I remember, you made a survey of the court decisions in other states here a few years ago which was published by the National Safety Council. Didn't you find that this term, "loss of that clearness of intellect and control of himself" etc., which the Arizona court has used has been more or less copied by courts in other states?

JUDGE PORTER: That seems to be the predominating phrase throughout all of the judicial decisions.

Effect on Driving Ability

MR. MCBURNEY: You continue to use this phrase, "under the influence of intoxicating liquors." How is a driver influenced Harger?

DR. HARGER: Well, as Judge Porter just read in this Arizona decision, there are various stages or degrees of "under the influence," and briefly they would run something like this: The first effect of alcohol on the brain is a warped judgment. Psychologists and physiologists call it a lowering of the inhibitions. The brakes are off, and the individual does a lot of things he wouldn't do otherwise. If he is a driver he takes chances that he wouldn't take otherwise. Second, along with that there is a lengthened reaction time. That means it takes a longer time for the muscles to obey the brain and therefore such a driver can't put his brakes on as quickly as he would otherwise. Third would be the effect on vision. The individual

has what we call "channel" vision: he can't see as well to the side. Those are the first effects.

Then as there is more alcohol in the brain there becomes greater and greater difficulty of muscular co-ordination with the brain. The individual staggers and talks with a thick speech, etc., which are well known criteria. And finally if the amount in the brain gets high enough the individual is in what we call surgical anaesthesia. Now, obviously you are not going to have many drivers in this group—or any of them—because they couldn't be sitting up at the wheel.

MR. MCBURNEY: Do you make any attempt to classify these drivers in terms of intoxication?

DR. HARGER: Under the law, as I understand it, you don't have to make a classification. The judge can adapt his penalty to the degree of intoxication. All that you have got to prove is whether or not the individual was under the influence within the meaning of the law, as I understand it—although I'm not a lawyer.

Chemical Tests

MR. MCBURNEY: What is the best way of getting at that, Donigan, of determining whether or not a driver is under the influence of intoxicating liquor?

MR. DONIGAN: By the use of chemical tests.

MR. MCBURNEY: Can you rely on the testimony of enforcement officers and witnesses?

MR. DONIGAN: No, because when you take the testimony of lay witnesses, or that of police officers, who have observed the defendant when they say he was under the influence, it is just opinion testimony and opinions vary. Opinions sometimes vary because of other motives. For instance, people are interested in the prosecution or people are interested in the defendant so they are not always reliable. Chemical tests are certain.

JUDGE PORTER: In addition to that, Donigan, you have this factor. The

trial judge, who is always a very helpful fellow in these cases, is required by law to give the jury an instruction that they must be satisfied of the defendant's guilt beyond a reasonable doubt.

MR. DONIGAN: That's correct.

JUDGE PORTER: That being so, it is extremely difficult for any jury to be satisfied beyond a reasonable doubt on the mere opinion evidence of laymen on the one hand and counter opinion evidence of laymen on the other hand.

'Appearances Unreliable'

DR. HARGER: I would like to say here that one of the reasons why these chemical tests have been emphasized is that the ordinary criteria frequently failed. For example, it may appear that the man is pretty drunk at the time of the accident, and yet when he comes into court he can argue that he behaved in a peculiar manner because of shock or injury.

And let me add this: the odor on the breath is one of the common criteria. That's not fair at all, because the odor of the breath after consuming an alcoholic beverage is due to the flavoring matter of the beverage and that varies enormously from beverage to beverage. It is possible for a person to have a pretty smelly breath and yet not be intoxicated. If he staggers, and can't say "Methodist-Episcopal" that is better evidence. If he is a Baptist or Catholic, he oughtn't to have to say that anyway. [Laughter] But even there shock or injury may cause those impairments.

MR. DONIGAN: Dr. Harger, aren't there illnesses and other physical conditions which sometimes create the symptoms of intoxication other than just shock or injury?

DR. HARGER: There are a large number of types of bodily infirmities. I recall a case we had in Indiana a few years ago where a man ran his car into a filling station pump and was arrested for being drunk and drunken driving and yet the chemical test

showed he didn't have any alcohol in him at all: He was suffering from a physical impairment. It should be emphasized that one of the important features of these tests is to exonerate the person who is not drinking.

Protects the Innocent

JUDGE PORTER: I should like to say to you, Dr. McBurney, that from our own experience—you will realize that our city [Evanston, Illinois] is perfectly dry. We have no taverns, no saloons or anything else that would contribute to a wet picture. Our city has about 80,000 in population. We test about 190 of these drivers a year, and it has been our experience that the tests are clearing all but about 85 of them—which indicates they are a protection to the innocent as well as a means of detecting the guilty.

MR. MCBURNEY: You keep referring to these chemical tests. Just what are these tests, Harger?

DR. HARGER: They are very simple. They are merely an analysis of some body material for alcohol and how much. And as body materials there are several that can be used: There are blood, urine, saliva, or breath because there is a definite correlation or ratio between the level of alcohol in those substances and in the rest of the body, including the brain. In other words, the purpose is to estimate the level in the brain—which you can't do in living subjects very practically—by analysis of one of these other body materials. That is the test.

Now then, there is next the interpretation of the test.

MR. MCBURNEY: That's what I was going to ask: How do you define drunkenness or "under the influence of intoxicating liquor" in terms of these tests?

DR. HARGER: The customary interpretations that are used in this country were developed by certain technical committees of men who have had years of experience in watching and testing individuals with various amounts of alcohol in their systems.

Those two committees are a committee of the American Medical Association and a technical committee of the National Safety Council—and those two committees have agreed exactly on certain recommendations for interpretation.

MR. DONIGAN: Dr. Harger, I think it ought to be emphasized here that it isn't just the recommendations of the doctors alone. They just didn't sit around a table like we are doing here and then arrive at a certain figure, but they did it after thousands and thousands of experiments on human beings and animals.

DR. HARGER: Oh yes. And not only that, but the experience in other countries—they have followed somewhat the experience of Sweden where they used chemical tests even before we did. Yes, this is the result of not just guesses, but of actual experimental data.

JUDGE PORTER: What are those figures, Dr. Harger?

Result of Long Study

DR. HARGER: Well, in the first place, they agreed that since some people do carry their liquor, we will say, better than others, that you can't divide all drinking drivers into just two groups and take a certain level of blood alcohol and say everybody just above this is drunk and everybody just below is sober. What they did was to divide drinking drivers into three groups, those with the low body alcohol, below which practically nobody would be under the influence; then a high group, in the lower part of which even the most seasoned group would be under the influence; and then a middle group where some of the people would be under the influence. The critical figures that are used there are .05 per cent or below for the low group, and then jumping to the high group .15 per cent or above; and the middle group between .05 per cent and .15 per cent. In the lowest part of the top zone .15 per cent of alcohol in the blood, for the average 150 pound person, means he would have accumulated

alcohol in his body corresponding to at least 6 ounces of hundred proof whiskey and for many of them about 8 ounces or half a pint of hundred proof whiskey; and most people, even heavy drinkers agree that that isn't just an eye opener before breakfast.

Reliability of Tests

MR. MCBURNEY: How reliable are these tests, Donigan?

MR. DONIGAN: Very reliable. Chemists and doctors who are trained in this know definitely from the tests just how much alcohol concentration there is in the blood.

MR. MCBURNEY: Can they be administered easily? Are they practical as a means of getting at this problem, Judge?

JUDGE PORTER: Yes, the longest one, I think, takes about 20 minutes to run.

MR. MCBURNEY: Who gives the chemical tests?

JUDGE PORTER: It depends on how the police department is equipped. Some of our departments of police have police chemists who handle this situation very easily. Others are required to use either the city health department laboratory or notably in the case of Michigan they send their test material to the state toxicologist for testing.

MR. MCBURNEY: Is the evidence derived from tests of this kind admissible in the courts, Donigan?

MR. DONIGAN: Yes, they are admissible in courts. Many of our states now, 12 to be exact, have adopted laws making them specifically admissible, but under the old common law rules that apply in most of our trial courts, there is no question that the results of these tests are admissible in evidence.

MR. MCBURNEY: Can you compel a man to submit to a chemical test of this kind?

MR. DONIGAN: Well, that's a controversial question. Many defense counsels in these cases raise that point.

In other words taking a sample of a man's blood or taking a sample of his urine or a sample of his breath is a violation of his privilege against self-incrimination.

DR. HARGER: Chemical tests have been used in Indiana now for the last 10 years, and I believe the state police will tell you that their experience is that the very fact that a driver has liquored up, means he has lost most of his sense of caution, and they don't have much trouble in getting cooperation—except perhaps for repeaters.

MR. DONIGAN: Of course, this question of privilege against self-incrimination is an old one in the law, and has been raised in many other issues other than chemical tests to determine intoxication. For instance, the question of finger prints. Every police department in the United States today fingerprints every man arrested for a serious crime, and sometimes finger prints at the scene of the crime compare with those taken when a man is arrested. And the question has come up, has this been a violation of the privilege against self-incrimination. That is, has a man been forced to give evidence against himself? And most of the courts say that he has not; that this privilege against self-incrimination applies only to testimonial utterances, confessions or written statements made by the defendant where he has done something, to say by his own lips, "I have committed the crime."

Admissible in Court?

JUDGE PORTER: I think Colonel Donigan has used language here which to me indicated that he meant something which I am sure he didn't mean. The test results, if they are supplied by a reliable chemist and backed up by a reliable medical man and the method shown in the evidence is an approved method, are positively admissible in any of our courts operating under the English common law system and without any statutory enabling acts. The purpose of the legislation simply was to supply a legislative interpretation

of the test results in these 12 states because of the fact that it is difficult for the prosecutors to lay their hands on a medical man or a toxicologist with a sufficient personal experimental background to testify for them. For instance, in our own city we have to go clear to Milwaukee to get the necessary expert. So the legislatures have been asked to provide a legislative interpretation which enables the trial judge to give the jury an instruction explaining what these figures mean.

Legal Status

MR. MCBURNEY: What is the legal status of a drinking driver once he has been identified? Is driving under the influence of intoxicating liquor a criminal offense in and of itself, that is, apart from accidents.

MR. DONIGAN: Yes, all the prosecution has to prove is that his faculties have been impaired by the use of intoxicating liquor.

MR. MCBURNEY: Whether there has been an accident or not?

MR. DONIGAN: Where there has been an accident or not, or whether or not the driver is actually driving safely, because the courts consider that a man under the influence of intoxicating liquor is a danger and menace to the other people on the highway.

DR. HARGER: Mr. Donigan, doesn't this point frequently come up? Sometimes it is harder to prove driving than intoxication.

MR. DONIGAN: That is right. You must always show that the person was actually driving the vehicle.

MR. MCBURNEY: What is the status of a drunken driver in a civil action where damages are being determined?

MR. DONIGAN: He is really in a bad way because no matter whether his being under the influence of intoxicating liquor was the proximate cause of the accident, he usually has two strikes on him with any judge or any jury simply because he has been under the influence of intoxicating liquor.

MR. MCBURNEY: Does it work that way in your court, Judge Porter?

JUDGE PORTER: I have noticed that there seems to be a peculiar psychology in our juries which are representative of the county of Cook as a whole because they are drawn from the entire county. In the civil cases where damage is an issue, the jury is perfectly willing to put the party who is injured or damaged back in the *status quo* with compensatory damages when drunkenness is shown as against the adverse party. But, when it comes to the criminal cases where a penalty is to be inflicted they are a little loathe to do it under the old type of testimony as to objective symptoms. We need the chemical tests to give them something definite and concrete on which they may rely implicitly in finding a verdict.

MR. MCBURNEY: If that is the case, what are your recommendations to reduce this problem of drunken driving, Harger?

Summary

DR. HARGER: In the first place, I think the general use of chemical tests will help take the guesswork out of these cases and will aid enormously in the administration of justice. That I believe we will all agree on, won't we?

MR. DONIGAN: I think so. I would say certain and consistent law enforcement and punishment. Many times we have this question put to us, "Don't you think that we should recommend heavier penalties?" I don't think so. If we enforce the laws that we have now in most of the states and make the punishment certain and consistent, I don't think we will have any trouble at all.

MR. MCBURNEY: Do you go along with those recommendations?

JUDGE PORTER: I certainly do, Dr. McBurney. The medical profession has indicated there are 60 or 65 pathological conditions which may be confused with drunkenness in the eye or in the mind of the layman, and even

in the eye or mind of the medical man, and the only real way to be absolutely sure of the defendant's condition is to use the chemical test.

MR. MCBURNEY: In conclusion, gentlemen, I think you have made it clear that the drunken or drinking driver is a menace on the highways. The best way to stop this fellow apparently is to make his guilt completely clear in

every court by chemical tests of intoxication; and then invoke reasonable penalties consistently and surely.

Any person who does not support this program vigorously has only himself to thank if he is the victim of the drunken driver. The Reviewing Stand is glad to support the National Safety Council in its campaign against the drunken driver.

Suggested Readings



Compiled by Barbara Wynn, Assistant,
Reference Department, Deering
Library, Northwestern University



American City 63:123, F., '48. "Is He Drunk or Sober? Detroit's Drunkometer Test Equipment." L. M. O'BRIEN.

Emphasizes that the drunkometer has saved many innocent persons from being punished for drunken driving.

Journal of the American Medical Association 3:1076-85, S. 17, '38. "Alcohol in Relation to Traffic Accidents." RICHARD L. HOLCOMB.

Describes a study initiated by the Northwestern University Traffic Institute to determine the extent of drinking among drivers.

Journal of the American Medical Association 108:2137, Je. 19, '37. "The Drunkometer, a Device for Quickly Testing Automobile Drivers for Alcoholism." R. N. HARGER.

Dr. Harger's description of his own invention.

Journal of Criminal Law and Criminology 36:132-47, N.-D., '45. "Constitutionality of Compulsory Chemical Tests to Determine Alcoholic Intoxication." BERNARD M. MAMET.

Constitutional issues involved in the use of chemical tests, with a suggested means by which such tests can be given without the consent of the person involved.

Journal of Criminal Law and Criminology 39:225-52, Jl.-Ag., '48. "Medico-legal Aspects of Chemical Tests of Alcoholic Intoxication." I. M. RABINOWITCH.

Analysis of various tests of intoxication from the medical point of view with some legal relationships indicated.

Journal of Criminal Law and Criminology 39:402-10, S.-O., '48. "Medicolegal Aspects of Chemical Tests of Alcoholic Intoxication: Comments on Dr. I. M. Rabinowitch's Paper." R. N. HARGER.

Journal of Criminal Law and Criminology 35:202-20, S.-O., '44. "Some Practical Aspects of Chemical Tests for Intoxication." R. N. HARGER.

Non-technical article on the effect of alcohol, information found by chemical tests, and qualifications of persons conducting the tests.

Journal of Criminal Law 38:533-41, Ja., '48. "Tests for Intoxication." D. S. LEONARD.

Commissioner Leonard describes the steps taken and the success which has been obtained by the Michigan State Police through the introduction of chemical tests for intoxication.

Kentucky Law Journal 34:250-67, My., '46. "Proof of Alcoholic Intoxication." H. W. NEWMAN.

A definition of alcoholic intoxication and a discussion of types of proof of the condition.

National Safety Council "Accident Facts, 1949 Edition." pp. 54-55. Chicago, 1949.

Contains the latest facts and figures on drunken drivers.

National Safety Council Department of Public Information. Radio Division. "Exploded Alibis, a Pattern Radio Script on the Subject of Chemical Tests for Intoxication." Chicago, 1945.

An interesting and simple discussion of the tests used.

Newsweek 18:68, D., '41. "Whisky Behind the Wheel: Drivers Plied with Drinks Studied by Scientific Cops in Kansas City."

Describes an interesting experiment conducted by the Kansas City police to determine how dangerous a drinking driver really is.

Quarterly Journal of Studies on Alcohol 8, No. 3:385-405, D., '47. "The Drinking Driver: Problems of Enforcement." DAVID G. MONROE.

Points out that evidentiary use of chemical tests should be expedited by legislation which would interpret test results.

Quarterly Journal of Studies on Alcohol 7:588-95, Mr., '47. "Contribution of Alcohol to Accident Fatalities in Hennepin County (Minn.) During a One-year Period." GOODWIN JOSS.

A statistical study.

Quarterly Journal of Studies on Alcohol 2, No. 1:57-72, Je., '41. "A Portable Automatic Apparatus for the Indirect Determination of the Concentration of Alcohol in the Blood." LEON A. GREENBERG and FREDERIC W. KEATOR.

A technical discussion of the Alcoholometer developed at Yale University. *Safety Education* O., '39. "When is a Driver Drunk?" HARRY H. PORTER.

Emphasizes the difficulty of proving intoxication without chemical tests. *University of Pittsburgh Law Review* 10:164-94, D., '48. "Commonwealth of Pennsylvania vs. the Drinking Driver." G. B. STEGENGA and R. N. KALLOCK.

Analysis of the problem of drunken driving in Pennsylvania.

Free pamphlets published by National Safety Council, 20 North Wacker Drive, Chicago 6, Illinois.

"Chemical Tests in Action." A reprint of articles which have appeared in *Public Safety*.

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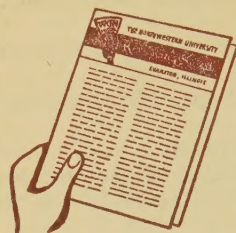
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